Several additional species known to be parasites of Hymenoptera were observed but had no apparent definite association with *P. adornatus* other than their occurrence in the nesting area. The hymenopterous parasites included the following: Chrysididae; *Omalus cressoni* Aaron, one female and *Hedychridium* sp. three females, (both species collected in the afternoon). Mutillidae; *Dasymutilla californica* (Radoszkowski), two females (11:10 A.M., 4:30 P.M.) and *Sphaeropthalma* sp., one female (8:30 A.M.). Among the Diptera were: Bombyliidae; *Lepidanthrax inaurata* Coquillett, one male and female (afternoon), Sarcophagidae; *Senotainia* sp. nr. *vigilans* Allen, one female (afternoon), *Senotainia trilineata* van der Wulp, one female (late afternoon), *Metopia leucocephala* (Rossi) two females (late A.M.).

Additional observations by Linsley, MacSwain, and Bohart on *Psammaecius adornatus* (Brad.) at Arroyo Seco, Monterey County, California showed that the nesting activities were going on concurrently with the Mt. Diablo population. The provisioning behavior at the Arroyo Seco colony was reported to be almost identical with that described above. The prey here also consisted of an undetermined membracid nymph.

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A NEW SPECIES OF CHAETOSTOMA FROM CALIFORNIA

(Diptera: Tephritidae)

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The tephritid herein described has been confused for many years with *Chaetostoma rubida* (Coquillett) because of its close relationship to that species. D. W. Coquillett described *rubida* in 1899 and placed it in the genus *Epochra*. The type (U.S. National Museum No. 4397) is from Colorado.

Recent study of California *Chaetostoma* specimens in the

various private and institutional collections on the Pacific Coast reveals that these are all distinct from the type material of *rubida* (Coq.) and from other *Chaetostoma* specimens from Colorado and Montana.

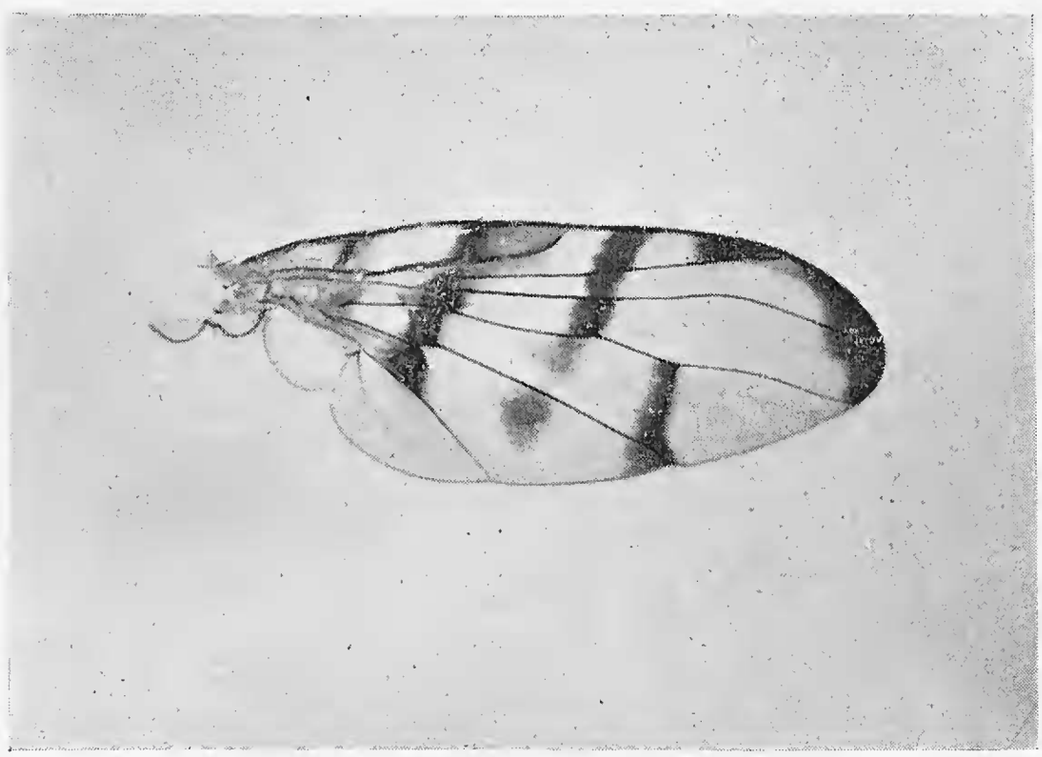
Chaetostoma elizabethae Quisenberry, described from Northern Colorado, is a synonym of *C. rubida* (Coq.). (New synonymy.)

Chaetostoma californica Blanc, new species

Male.—Head: Front orange to straw-colored, surface with sparsely scattered short, fine setae; front wider at vertex than width of one eye. Three pairs of black lower fronto-orbitals; two pairs of black upper fronto-orbitals which curve almost directly caudad. Antenna approximately as long as face, with terminal segment straw-colored tinged with pink, thinly grayish pruinose; arista bare and black except for light brown base. Face pale golden yellow blending to deep orange and faintly pruinose with white; face in lateral view only weakly protruding. Oral edge of bucca with a row of about 10 coarse, black bristles with a few finer black setae at the posterior end of the row. *Thorax:* Mesonotum deep orange, faintly pinkish in posterior portion, thinly white pruinose, rather uniformly covered with closely set fine, short, brown setae. Dorsocentrals on a line with supraalars. Scutellum orange, faintly rose-pink in center at base; two pairs of long black scutellar bristles; a few minute dark-brown setae beginning just cephalad to anterior scutellars and extending almost to posterior scutellars. Mesopleuron glabrous, yellow-orange to ochreous, with a white-to-pale-yellow band extending longitudinally caudad from just beneath the humeral bristle, extending along the dorsopleural suture to the wing attachment. Mesosternum near median line and anterorventral surfaces of all three pairs of coxae clothed with numerous long, black bristles. Femora orange to ochreous, tinged with rose in the central portion of each segment; hind femora with three strong setae before the apex dorsally; tibiae yellow, becoming pale near apices; tarsi pale yellow dorsally and white ventrally. *Wing:* (fig. 1)Hyaline with five brown maculations as follows: first begins at junction of costa and humeral crossvein and extends posteriorly to bases of the second basal and anal cells; second originates at juncture of costa and auxillary veins and extends posteriorly, crossing parallel and bordering mesally on basal crossvein, ending at distal point of the anal cell; third extends posteriorly from a point on costa one-third the distance from apex of first longitudinal vein to apex of second longitudinal vein, continues along the length of anterior crossvein, ending about half way through third posterior cell; fourth begins at (or very slightly anterior to) juncture of fourth longitudinal vein and posterior crossvein, then follows the crossvein posteriorly, meeting caudal wing margin at (or slightly mesad to) terminus of fifth vein; fifth maculation begins at costa about two-thirds the distance from apex of first vein to that of second vein and extends posteriorly only as far as second vein, but extends distally along costal wing margin to apex of fourth vein, the band becoming narrow or extinct at apex of second vein. Stigma

non-transparent yellowish-white. Third longitudinal vein dorsally with 17 well-spaced black setae extending from base to slightly beyond anterior crossvein. Juncture of anterior crossvein with discal cell slightly less than two-thirds the distance from basal crossvein to posterior crossvein. *Abdomen:* Glabrous orange to ochreous tinged with rose; fifth abdominal tergite bearing a large, round reddish-brown to black maculation dorso-laterally; tergites evenly covered with short fine setae; distal tergites each with a row of longer black bristles on the caudal margin; genitalia with forceps abruptly bending posteriorly at about a 35° angle, claws of forceps attached so that their extremities almost reach apices of forceps, the latter bearing one or two long setae close together and just beneath the tips of the claws.

Female.—Same as male in chaetotaxy and color except lacking the large dorso-lateral maculation on the fifth abdominal segment.



EXPLANATION OF PLATE

Fig. 1. Wing of *Chaetostoma californica* Blanc.

Holotype male: LA MESA, SAN DIEGO COUNTY, CALIFORNIA, February 11, 1957 (G. L. Hill), deposited in the California Academy of Sciences. Allotype female: San Ysidro, San Diego County, California, June 6, 1957 (J. L. Johnson); deposited in the California Academy of Sciences.

Paratypes: 29 males and 36 females (all from California) as follows: *San Diego County:* 1♀, La Mesa, Jan. 8, 1959, J. Gaven; 1♀, La Mesa, Mar. 11, 1959, G. L. Hill; 1♂, San Ysidro (4 miles E.), Feb. 11, 1957, Edward Soukup; 1♀, San Ysidro, June 10, 1957, J. L. Johnson; 1♂, San Ysidro, Sept. 6, 1957, R. D. Hancock; 3♂♂ and 2♀♀, Alpine,

Jan. 27, 1959, D. Close; 5♀♀, Alpine, Mar. 2, 1959, D. Close; 2♂♂, Hipass, Dec. 20, 1958, D. Close; 1♂ and 6♀♀, Campo, Jan. 28, 1959, S. M. Klopfer; 1♂, Campo, Feb. 19, 1959, D. Close; 1♂, Pine Valley, Nov. 29, 1958, D. Close; 1♀, Tecate, Dec. 18, 1956, G. L. Hill; 3♀♀, La Posta, Feb. 28, 1959, D. Close; 1♀, El Cajon, Mar. 2, 1959, D. Close; 1♀, Guatay, Feb. 28, 1957, Wiest; 1♀, La Jolla, Mar. 11, 1957, S. M. Klopfer; 1♀, Fallbrook, Feb. 6, 1957, D. F. Palmer; 1♀, Dulzura, Aug. 9, 1959, D. Close; 1♀, Winter Gardens, Mar. 3, 1959, D. Close. *Los Angeles County:* 1♂, Long Beach, July 12, 1957, Paul Engler. *Santa Barbara County:* 1♀, Carpinteria, May 13, 1959, I. B. Treloar; 1♀, Summerland, Aug. 12, 1957, Guy Beevor; 1♂, Santa Barbara, Sept. 4, 1957, Guy Beevor and H. T. Osborn; 1♂, Goleta, Sept. 18, 1957, Guy Beevor; 1♂, Goleta, Sept. 19, 1957, Guy Beevor; 1♀, Goleta, Oct. 21, 1958, Marcus Cravens. *San Luis Obispo County:* 1♀, Atascadero, Nov. 12, 1958, J. Williams. *San Mateo County:* 1♂, Redwood City, Sept. 19, 1957, Max Leonard; 1♀, Redwood City, Aug. 1958, R. C. Lauder; 1♂, Portola, Oct. 22, 1958, San Mateo County Department of Agriculture. *Alameda County:* 1♂, Castro Valley, Sept. 20, 1957, Jerry Marston; 2♂♂ and 1♀, Fremont, Sept. 12, 1957, Ralph Freeman; 1♂, Centerville, Aug. 1953, R. P. Allen; 2♂♂ and 2♀♀, Centerville, Nov. 21, 1958, Johnson and Sibray; 1♂, Berkeley, Oct. 6, 1907, H. H. P. Severin; 1♂ and 2♀♀, "Hills back of Oakland," Oct. 6, 1951, W. C. Bentinck; 1♂, Livermore, Aug. 1958, T. R. Haig; 1♂, "Alameda County," Sept. 13, 1956, T. Enos. *Sonoma County:* 1♀, Petaluma, July 25, 1957, F. K. Jarvinen; 1♂, Glenn Ellen, July 15, 1957, M. G. Dornbush; 1♂, Santa Rosa, Sept. 15, 1956, T. B. Gallion.

Paratypes are deposited with U.S. National Museum; California Insect Survey (University of California, Berkeley); University of California (Davis, California); and the Bureau of Entomology, California Department of Agriculture, Sacramento, California.

Chaetostoma californica Blanc differs decidely from the closely related *rubida* (Coq.) in the nature of the brown wing maculations. In *rubida* the fourth and fifth bands definitely join at the costal margin of the wing. The fourth and fifth maculations of *californica* are widely separated, the fourth extending anteriorly barely past the juncture of the fourth longitudinal vein and the posterior crossvein.

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